

What is claimed is:

1. A rigid video-endoscope system including a front-end insertion section and a camera head, said rigid video-endoscope system comprising:

5           in order from an object side thereof and in the direction of said front-end insertion section to said camera head, an objective optical system, a relay optical system, an imaging optical system and a solid-state image sensor, wherein said front-end insertion section and camera head are detachable in the region of said relay optical system.

10           2. A rigid video-endoscope system as defined in claim 1, wherein said camera head includes a part of said relay optical system, said imaging optical system and said solid-state imaging sensor, said camera head further including a view field mask, wherein said view field mask, said imaging optical system and said solid-state imaging sensor are constructed to be integrally moved in an focusing operation.

15           3. A rigid video-endoscope system as defined in claim 2, further comprising a mask adjusting device for adjusting the position of said view field mask vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image sensor without decentering from said center when said view field mask is focused into an image  
20           on said solid-state image sensor through said imaging optical system.

4. A rigid video-endoscope system as defined in claim 2, further comprising a solid-state image sensor adjusting device for adjusting the position of said solid-state image sensor vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image sensor without decentering from said center when said view field mask is focused into an image on said solid-state image sensor through said imaging optical system.

5. A rigid video-endoscope system as defined in claim 2, wherein said imaging optical system includes at least a cemented lens having positive power, two positive lenses and a single negative lens.

6. A rigid video-endoscope system as defined in claim 1, wherein said camera head includes a part of said relay optical system, said imaging optical system and said solid-state imaging sensor, said camera head further including a view field mask, wherein said part of said relay optical system is constructed to be moved in an focusing operation.

7. A rigid video-endoscope system as defined in claim 6, further comprising a mask adjusting device for adjusting the position of said view field mask vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image sensor without decentering from said center when said view field mask is focused into an image on said solid-state image sensor through said imaging optical system.

8. A rigid video-endoscope system as defined in claim 6, further comprising a solid-state image sensor adjusting device for adjusting the position of said solid-state image sensor vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image sensor without decentering from said center when said view field mask is focused into an image on said solid-state image sensor through said imaging optical system.

9. A rigid video-endoscope system as defined in claim 6, wherein said imaging optical system includes at least a cemented lens having positive power, two positive lenses and a single negative lens.

10. A rigid video-endoscope system as defined in claim 1, wherein said camera head includes a part of said relay optical system, said imaging optical system and said solid-state imaging sensor, said camera head further including a view field mask, and said imaging optical system including a front lens group and a rear lens group, wherein said view field mask and said front lens group are constructed to be integrally moved in an focusing operation.

11. A rigid video-endoscope system as defined in claim 10, wherein said view field mask is located substantially at the front focal point of said front lens group.

12. A rigid video-endoscope system as defined in claim 10, which includes a mask adjusting device for adjusting the position of said view field mask vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image

sensor without decentering from said center when said view field mask is focused into an image on said solid-state image sensor through said imaging optical system.

5 13. A rigid video-endoscope system as defined in claim 10, which includes a solid-state image sensor adjusting device for adjusting the position of said solid-state image sensor vertically with respect to an optical axis to allow said view field mask to be focused into an image on the center of said solid-state image sensor without decentering from said center when said view field mask is focused into an image on said solid-state image sensor through said imaging optical system.

10 14. A rigid video-endoscope system as defined in claim 10, wherein said imaging optical system includes at least a cemented lens having positive power, two positive lenses and a single negative lens.

15 15. A rigid video-endoscope system as defined in claim 1, wherein said front-end insertion section has an outer diameter of  $\phi 6$  or less.

16. A rigid video-endoscope system as defined in claim 1, wherein said front-end insertion section is rotatable with respect to said camera head.

20 17. A rigid video-endoscope system as defined in claim 1, wherein a plurality of said front-end insertion sections are selectively replaceable to said camera head.

18. A rigid video-endoscope system as defined in claim 1, wherein light beam is substantially parallelized between said front-end insertion section and said camera head.

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